

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

CERRO FITZ ROY (ARGENTINA)

Altitude: 420 m.

Latitude: 49°20'S Longitude: 72°54'W

Temperature observation period.: 1941-1950 (10)

Rainfall observation period....: 1941-1950 (10)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	12.20	18.00	7.80	30.30	-1.50	58.0	93.43
Feb.	11.40	17.00	7.30	28.40	-2.50	62.0	73.12
Mar.	9.70	15.20	5.40	25.60	-3.30	67.0	61.94
Apr.	7.70	12.70	3.60	23.80	-13.00	92.0	41.46
May.	3.90	8.10	0.40	20.40	-14.50	92.0	20.51
Jun.	2.50	6.40	-0.90	19.90	-20.20	90.0	12.22
Jul.	2.40	6.30	-1.00	17.50	-16.30	73.0	12.82
Aug.	2.80	7.00	-1.20	17.60	-14.80	67.0	16.98
Sep.	4.40	9.40	1.50	19.50	-11.30	49.0	28.51
Oct.	7.60	12.80	4.10	22.50	-3.30	63.0	54.82
Nov.	9.00	14.40	5.20	25.20	-4.40	45.0	68.19
Dec.	11.00	16.20	7.10	26.50	-2.00	50.0	87.37
Year	7.05	11.96	3.27	23.10	-8.93	808	571.37

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	124
Compensated thermicity index.....(Itc):	124
Simple continentality index.....(Ic):	9.8
Diurnality index.....(Id):	10.2
Annual ombrothermic index.....(Io):	9.55
Monthly estival ombrothermic index.....(Ios1):	4.55
Bimonthly estival ombrothermic index.....(Ios2):	5.08
Three monthly estival ombrothermic index.....(Ios3):	4.91
Four monthly estival ombrothermic index.....(Ios4):	4.93
Annual ombro-evaporation index.....(Ioe):	0.86
Annual positive temperature.....(Tp):	846
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	346
Positive precipitation.....(Pp):	808

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	12	0	0	0	0

Latitudinal Belt...: High eutemperate

Continentalty.....: Hyperoceanic - High Subhyperoceanic

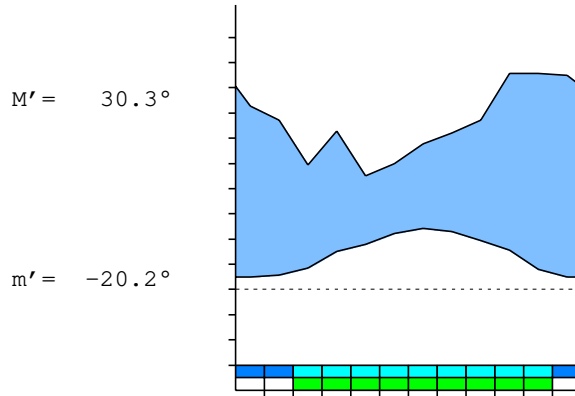
Bioclimate.....: TEMPERATE HYPEROCEANIC

Bioclimatic Belt...: LOW SUPRATEMPERATE UPPER HUMID

CERRO FITZ ROY (ARGENTINA)

420 m

P= 808      49° 20'S      72° 54'W      10/10 y.  
 T= 7.1°      Ic= 9.8      Tp= 846      Tn= 0  
 m= -1.0°      M= 6.3°      Itc= 124      Io= 9.6



TEMPERATE HYPEROCEANIC  
 LOW SUPRATEMPERATE UPPER HUMID

WATER INDEX CARD      CERRO FITZ ROY (ARGENTINA)  
 Altitude: 420 m.      Latitude: 49° 20'S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	2.4	13	73	0	100	13	0	60	53	4.6
Aug.	2.8	17	67	0	100	17	0	50	51	2.9
Sep.	4.4	29	49	0	100	29	0	20	36	0.7
Oct.	7.6	55	63	0	100	55	0	8	22	0.1
Nov.	9.0	68	45	-23	77	68	0	0	11	-0.3
Dec.	11.0	87	50	-37	39	87	0	0	6	-0.4
Jan.	12.2	93	58	-35	4	93	0	0	3	-0.3
Feb.	11.4	73	62	-4	0	66	7	0	1	-0.1
Mar.	9.7	62	67	5	5	62	0	0	1	0.0
Apr.	7.7	41	92	51	56	41	0	0	0	1.2
May.	3.9	21	92	44	100	21	0	27	14	3.4
Jun.	2.5	12	90	0	100	12	0	78	46	6.3
Year	7.1	571	808	*	*	564	7	244	244	*

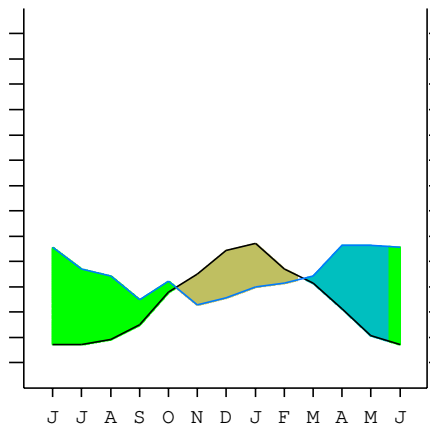
R = Reserve      VR = Variation of the reserve      RE = Real evapotranspiration  
 DR = Drainage      HC = Humidity coefficient      DF = Deficit      SP = Superavit

CERRO FITZ ROY (ARGENTINA)

49°20'S      72°54'W      420 m 10/10 y.

T= 7.1      Ic= 9.8      TEMPERATE HYPEROCEANIC  
 m= -1.0      Tp= 846      LOW SUPRATEMPERATE  
 M= 6.3      Tn= 0      UPPER HUMID  
 M' = 30.3      Itc= 124  
 m' = -20.2      Io= 9.6  
 P= 808      mm      ———  
 PE= 571      mm      ———

Imbibing	21 Feb.
Saturation	19 May.
Reserve Use	8 Oct.
Deficit	11 Feb.



CERRO FITZ ROY (ARGENTINA)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [A3a]  
 + Type .....: A. Hyperoceanic  
 + Subtype .....: 3. Subhyperoceanic  
 + Variant .....: a. High  
 Thermic types [B1.B5]  
 + Latitudinal zone ....: B. Temperate  
 + Latitudinal belt ....: 1. High eutemperate  
 + Thermic type .....: B. Temperate  
 + Thermic subtype .....: 5. Subtemperate  
 Bioclimatic types [C4.4b.7a]  
 + Macrobioclimate .....: C. TEMPERATE  
 + Bioclimate .....: 4. HYPEROCEANIC  
 + Bioclimatic variant ..:  
 + Thermic type.....: 4. SUPRATEMPERATE  
 + Thermic subtype.....: b. LOW  
 + Ombrothermic type ...: 7. HUMID  
 + Ombrothermic subtype : a. UPPER  
 Bioclimatic Classification .....: Texe.Ste.Hum

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 374  
 Coldest semester of the year.....(Psw): 434  
 Warmest four months period of the year.....(Pcm1): 237  
 Following warmest four months period.....(Pcm2): 347  
 Positive precipitation dryest 3 months.....(Ppd): 153  
 Positive precipitation dryest 2 months.....(Ppd2): 95  
 Positive precipitation dryest 1 month.....(Ppd1): 45  
 Positive precipitation warmest 3 months.....(Pps): 170  
 Positive precipitation warmest 2 months.....(Pps2): 120  
 Positive precipitation warmest 1 month.....(Pps1): 58  
 Positive precipitation coldest 3 months.....(Ppw): 230  
 Positive precipitation coldest 2 months.....(Ppw2): 163  
 Positive precipitation coldest 1 month.....(Ppw1): 73

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	230	157	170	251

Seasonal rainfall rhythms: F > W > S > P

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 12.2  
 Average coldest month [T].....(Tmin): 2.4  
 Maximum temp. warmest month [M].....(Tmmax): 18.0  
 Minimum temp. coldest month [m].....(Tmmin): -1.2  
 Absolute Max.temp. warmest month [M'].....(Tamax): 30.3  
 Absolute Min.temp. coldest month [m'].....(Tamin): -20.2  
 First warmest contrasted month [M].....(Tcmax): 18.0 (1)  
 First coldest contrasted month [m].....(Tcmin): 7.8 (1)  
 Estival temperature.....(Ts): 346  
 Positive temperature dryest 3 months.....(Tpd): 322  
 Positive temperature dryest 2 months.....(Tpd2): 200  
 Positive temperature dryest 1 month.....(Tpd1): 90  
 Positive temperature warmest 3 months.....(Tps): 346  
 Positive temperature warmest 2 months.....(Tps2): 236  
 Positive temperature warmest 1 month.....(Tps1): 122  
 Positive temperature coldest 3 months.....(Tpw): 77  
 Positive temperature coldest 2 months.....(Tpw2): 49  
 Positive temperature coldest 1 month.....(Tpw1): 24

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SEASONAL PARAMETERS

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Warmest semester...(Sms)	o	o	o	o							o	o
Dryest semester....(Smd)	o	o							o	o	o	o
Warmest 4 months...(Cm1)	o	o	o									o
Dryest 4 months....(Cmd)									o	o	o	o
Vegetation Activity(Pav)	o	o	o	o	o				o	o	o	o
Ultragelid...[M' <=0] (Pf)												
Hypergelid...[M <=0] (Pf)												
Gelid.....[T <=0] (Pf)												
Subgelid.....[m <=0] (Pf)						o	o	o				
Pregelid.....[m' <=0] (Pf)	o	o	o	o	o	o	o	o	o	o	o	o
Agelid.....[m' > 0] (Pf)												
HiperAgelid..[all>0] (Pf)												

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 0.71  
 Mediterranean index of January.....(Im1): 1.61  
 Mediterranean index of January & February.....(Im2): 1.39  
 Mediterranean index of December to February...(Im3): 1.49

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	500	580	620	670	920	920	900	730	670	490	630	450
Tp	110	122	114	97	77	39	25	24	28	44	76	90
Io (Iom)	4.55	4.75	5.44	6.91	11.9	23.6	36.0	30.4	23.9	11.1	8.29	5.00
Seasons	Summer			Autumn			Winter			Spring		
Pp(x10)/Tp	1700 / 346			2510 / 213			2300 / 77			1570 / 210		
Io (Iot)	4.913			11.78			29.87			7.476		
Semesters	December-May						June-November					
Pp(x10)/Tp	4210 / 559						3870 / 287					
Io (Iosm)	7.531						13.48					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 8080/846=9.55 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	500	580	620	670	920	920	900	730	670	490	630	450
Tp [T*10]	110	122	114	97	77	39	25	24	28	44	76	90
Iom [Pp/Tp]	455	475	544	691	\$\$	\$\$	\$\$	\$\$	\$\$	\$\$	829	500
Avm [200-Iom]	***	***	***	***	***	***	***	***	***	***	***	***
Seasons	Summer			Autumn			Winter			Spring		
Pp / Tp	1700 / 346			2510 / 213			2300 / 77			1570 / 210		
Iot [Pp/Tp]	491			1178			2987			748		
Avs E[Avm<200]	***			***			***			***		

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....(Sp): 9.80  
 CI of Gorezinski (1920) [1.7\*Sp/sin(Lat)-20.4] .....: 1.56  
 CI of Conrad (1946) [1.7\*Sp/sin(Lat+10)-14] .....: 5.37  
 + Hyperoceanic (-20<CI<20)  
 CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....: 0.56  
 + Hyperoceanic (0<CI<0.6)  
 Rainfall Index of Lang (1925) [R=P/T] .....: 114.61  
 + Temperate humid (160>R>100)  
 Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....: 47.39  
 + Humid (60>Ia>30)  
 I of Emberger (1930) [Q=100\*P/(Tmax<sup>2</sup>-Tmin<sup>2</sup>)] .....: 250.50  
 + Humid (Q>90)  
 I of Dantin & Revenga (1940) [DR=100\*T/P] .....: 0.87  
 + Humid (2>DR>0)  
 Aridity Index of UNEP [I=P/PE] .....: 1.41  
 + Humid (I>0.65)  
 Potential Erosion I of Fournier (1960) [K=Pi<sup>2</sup>/P].....: 10.48  
 + Very low (K<60)

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)  
 + Climate .....: A. Warm and temperate warm  
 + Region .....: 7. Mesoaxeric (Axeric temperate)  
 + Thermic type: 5. Meso-microthermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.28	0.31	0.36	0.55	0.64	0.66	0.52	0.47	0.31	0.36	0.24	0.25
T-E ratio	5.49	5.13	4.36	3.46	1.76	1.13	1.08	1.26	1.98	3.42	4.05	4.95
Precipitation-effectiveness: 49.54						Temperature-efficiency .....: 38.07						
Moisture Index [MI=100*(P-PE)/PE] .....: 41.41 + B2.Humid medium-humid (40<MI<60)												
Index of dryness [DI=100*d/PE] .....: 1.24 + No deficit (0<DI<16.7)												
Index of humidity [HI=100*s/PE] .....: 42.65 + Strong surplus (20<HI)												
Potential Evapotranspiration PE .....: 571.37 + First mesothermic (570<PE<712)												

